

THE macdonald JOURNAL

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THE MACDONALD LASSIE

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In This Issue

Cover: This baby chick wishes to
announce that spring is here!

Editorial	2
Grapes of Hope	3
Stinging Nettles Taste Good!	5
Productivity of Aquatic Plants And the Fertility of Sediments	7
The Family Farm	11
This Month with the QWI	16

Journal Jottings

Once a month, close to deadline
time, a large, brown envelope
bearing a Quebec City postmark
arrives on my desk. Now many
big dailies, television and radio
stations across the country have
their man in Washington, their man
in Toronto, their man in New York,
Paris, London, Ottawa, and their
man who always seems to be in
the right place at the precise
moment a news story breaks.
Well we have our man in Quebec
City — Mr. Tom Pickup, who we
just naturally know is going to
send us a dossier of material from
which to choose articles to fill the
Family Farm section of the
Journal.

This link with the Information
Office of the Quebec Department
of Agriculture and Colonization is,
we know, of great value to our
readers. Over the span of several
months we publish information on
new Acts, new grants, new
Government legislation, new
appointments in the various
Departments and important speech-
es made by Government officials.
We learn about Quebec farmers
who have won awards, about new
programs to promote the growing
of specific crops or the use of
specific products.

We can, through these pages, keep
abreast of emergency measures
or read in detail the rules and
regulations pertaining to a particular
piece of legislation that has been
laboriously worked out to provide
aid to a particular segment of the
agricultural scene.

Over the months what's happening
in Quebec agriculture is covered
thanks to Mr. Pickup, who expends
a great many working hours
translating from French to English
and from English to French words
and words and words that, in either
language, will assist in the pro-
motion of the well being of the
Quebec farmer. And, fortunately for
us, he's our man in Quebec who
never fails to send that large,
brown envelope for the Family
Farm.

Hazel M. Clarke

The Quebec Farmers Association is an organization that has recently found new life. In recent years it has been in a somewhat dormant condition with only a few activities and only a few members participating in these activities. The organization had no program and really wasn't sure what goals it should be trying to achieve.

But things have changed during the past year and the organization now has new life. It has taken on a new orientation of incorporating social, educational, and informational programs into the overall program of the Q.F.A. The members of the organization are very interested in this new direction of the organization as witnessed by a turnout of over 60 members at a recent meeting at Macdonald College. Previous such meetings saw only about a dozen people attend.

Some may say that developing

social and educational programs really isn't that important and will not lead to any concrete action that will benefit the members. Rather the organization should get involved in programs that will have a direct financial benefit to the farmer.

Perhaps this is something the organization will strive for in future years. But it must be kept in mind that before a group can undertake any concrete action, it must first become organized and learn the skills necessary to do these things. The members must first learn how to work together as a group. They must feel a part of the group, have a commitment to its goals, and feel that their membership will be mutually beneficial both to them and the organization. They must learn how to communicate and how to develop leadership within the organization.

The best way to achieve these skills

is to develop educational and social programs whereby the members can actually participate and develop their personal skills. In fact this could be considered as the ultimate goal of the organization. Such a goal could do much in unifying and strengthening the position of the rural community in Quebec.

The Quebec Farmers Association does now appear to be in a position to offer a program that is new and attuned to the needs of the rural community. It is a program in which you will benefit to the extent that you are willing to put something into it. For those who have been complaining that the rural community is disintegrating and dying, here is your chance to do something about it.

Gordon Bachman

Grapes of Hope

An old French adage says "Tout est un point à qui sait attendre." When French people settled in Quebec 300 years ago they could not grow grapes to produce wine. In 1973 there are hopes that some vinifera and hybrid grapes might be grown successfully on the MacDonald Research Farm.

The future is fascinating. According to "La Revue Vinicole Internationale," juin-juillet 1972, the annual per capita consumption of wine would require a twenty-five fold increase in North America to approach the level of 115 litres per person as in France or Italy. The prospects of increased consumption are staggering especially at a time when grape-producing areas of Ontario are experiencing difficulties because of inclement weather in 1972 and because of the disappearance of grape land in favour of non-agricultural land usage.

When the Tiliburton Vintners Inc. of California went public in 1970, shares sold at \$7.50 in New York. One year later, with only 4 cents earnings, the shares were selling over the counter at \$44. Within one year in Quebec, the Bright Wine Company announced projected enlargement of its facilities in Lachine, the Calona Winery has set up a plant in St. Hyacinthe, Les Vins Chanteclerc Inc. are in Quebec City and the Deloso Wine Co. in Laval. Not one of the manufacturers could use Quebec-grown grapes if he wanted to, because none is produced commercially. The companies make wine from imported grapes or imported concentrates while one company only is allowed to blend up to 20 per cent of imported wine.

The latter is a very special case, which requires the government-owned Quebec Liquor Corporation to import the wine which is to be used for blending.

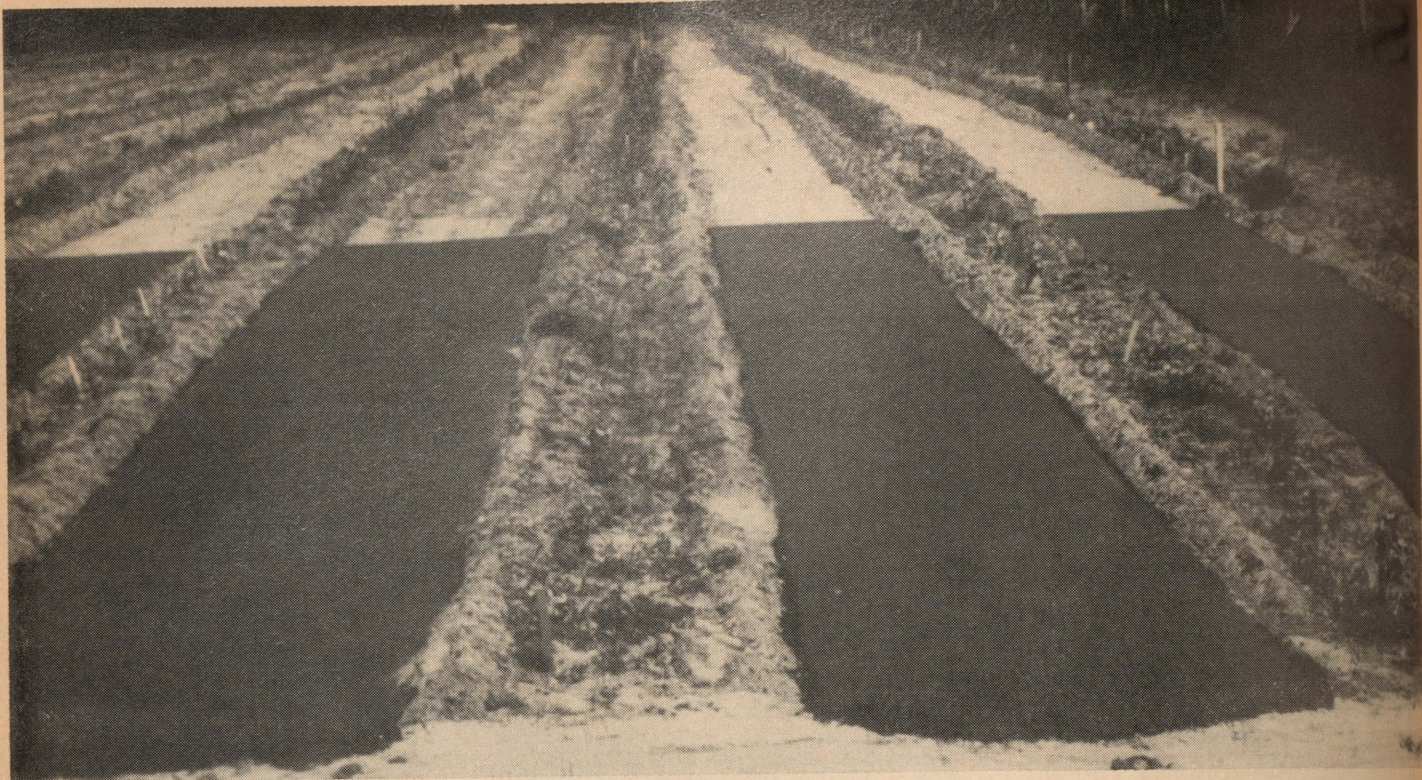
The Experiment

Following a series of experiments which I had conducted on methods and on techniques to modify the micro-climate of the soil in this area, I accepted the challenge in 1970 to try to grow vinifera grapes for making table wine. (This research is funded by the Quebec Agricultural Research Council.) Previous attempts to grow this kind of grape in southern Ontario and the State of New York had brought dismal results. Professor van den Hende working at Oka with vinifera and hybrid grapes from 1957 to 1962 concluded that it would be impossible to grow this kind of grapes because of our severe climate and cool, short growing season. The acidity of the grapes remained high while the sugar content was low.

It takes approximately 22 per cent sugar content in the grape (measured by means of a saccharimeter) to produce a wine of fair quality without adding sugar. The accumulation of sugar inside the grapes requires plenty of thermal units. The main objectives of the experiment therefore consist in trying early maturing varieties of grapes which resist our severe winter weather and ripen relatively early, while testing cultural practices which favour the accumulation of heat units at a short distance above the ground.

In the spring of 1970 grafted plants of Lambrusco maestri and Merlot

grapes (*vitis vinifera*) imported from northern Italy were planted in a St. Bernard stony loam and a St. Benoit sandy loam located in a back section of the Seed Farm which is sloping gently to the south. The rows are oriented east-west. Twelve other varieties of vinifera and 11 varieties of hybrids were added to the collection in 1971 and 1972. In the spring of 1971 two thirds of the surface area of some plots were covered with asphalt to increase the accumulation of heat units. Some plots were protected against winds blowing from the west, the north, and the east while others remained unprotected. Fertilizer treatments with half the recommended dosage of nitrogen and with twice the recommended rates of phosphorus are experimented as well. All plants were shaped on wires according to a modified "Guyot or cordon" system whereby the two main branches are tied horizontally to a low wire stretched at 16 inches above the ground, while the bearing branches grow vertically and are tied to the high wires. Two replacement branches are allowed to grow in the centre of the plant and are bent horizontally during the growing season. Preliminary results indicate that sheltering against cold winds plus a surface cover of asphalt accumulates more thermal units than no treatment at all. The "Guyot nain" system allows an efficient protection of the low horizontal branches with straw during the winter. It also enables the plant to benefit from the heat released off the soil in order to increase the sugar content of the grape. The highest sugar content recorded in the fall of



1972 was 18 per cent in the Merlot variety. Sophisticated techniques to further increase the accumulation of heat units in 1973 with the help of clement weather might increase appreciably the sugar content of the grapes next fall.

First wine-making attempts by Professor Henneberry of the Department of Agricultural Chemistry and Mr. Vo Quang in the fall of 1972 indicate that it might be possible to make fairly good quality

table wine with bouquet from vinifera or hybrid grapes grown in Quebec.

Many aspects of grape growing and wine making in Quebec need further investigation before successful grape growing may be assured. It seems however that with care and perseverance a small percentage of our suitable soils, which occur under suitable climate, might be turned into a few thousand acres of grapes in Quebec. The

Two thirds of the surface area of the plots were covered with asphalt to increase the accumulation of heat units. Below: Windbreaks were added as additional treatment to further increase the accumulation of heat units.

development trend should be one of good quality wine rather than one of a large quantity, to convert a few acres of mediocre land into a small territory of high economic returns.

Prof. J. F. G. Millette,
Department of Soil Science.



Stinging Nettles Taste Good!

Who doesn't know nettles? Their painful sting makes a lasting impression! But have you ever tried eating them? "Wait a minute," you say, "Don't these plants sting?" Let me tell you about them!

Nettles send up young shoots from a creeping underground rootstock in May and sometimes later in the growing season. The stout stems which are usually found in a dense clump grow up to six feet tall. The large, green leaves arise opposite each other on the stem and have one pair of stipules (outgrowths of tissue at the base of the leaf stalk) at the point of attachment of each leaf. Young nettle shoots can thus be distinguished from other young plants such as wild mint and vervain, which lack stipules. The small flowers are greenish, arising in the axils of the upper leaves and hang down in clusters (Figure 1). Two kinds of nettle are found in eastern Canada. *Urtica dioica* L. ssp. *dioica* (stinging nettle) was introduced from Europe and is prevalent in the Maritime provinces. *Urtica dioica* L. ssp. *gracilis* (Ait) Selander (slender nettle) is native and more common throughout the rest of eastern Canada. The plants occur along streams, flood plains, fence rows and waste ground where the soil is somewhat moist.

The main drawback to using nettles for food is the presence of stinging hairs, which makes handling the plants a problem. These sharp stiff hairs are hollow with an enlarged base and are filled with an irritating liquid. On the very end is a small bulb-like tip that,



Figure 1. Upper portion of nettle stem showing leaf arrangement and flower clusters.

when touched, breaks off along a jagged predetermined line. If the tip is allowed to penetrate the skin, the liquid is injected as if from a hypodermic needle.

When gathering nettles, gloves, preferably leather ones, should be worn. However, the young shoots can be handled if grasped firmly with the thumb and first two fingers. One should avoid touching them with the tender skin of the hands. Even if some stings occur the effects usually soon pass away. It is reported that the rubbing of plantain leaves or fiddle-heads on the stung area helps to relieve the stinging-burning sensation. This does not work for all people however. Of course the sting is inactivated completely by cooking the plants.

The most common use of nettle is as a potherb, cooked and used like spinach. They have the bland taste of spinach and therefore are often mixed with some of the stronger tasting herbs like mustard, pigweed, or sorrel. Turnip greens, collards, or kale can also be used. A typical recipe is as follows:

Nettles and Mixed Greens

2 cups coarsely chopped nettles
2 cups mixed greens
1 teaspoon salt (to taste)
1 cup water

Boil together for 3-5 minutes.

Tender young shoots about 6 to 8 inches tall can also be used. They can be boiled for about 15 minutes with just enough water to cover the herb. Serve with butter and a little lemon or salad dressing.

The following two recipes are suggested for soup.

Nettle Soup

1-2 cups nettle shoots
1 tablespoon butter or oil
1-1½ oz. flour
Milk

Wash and boil the nettle shoots, then work the parts through a sieve. Add the melted butter, flour, and sufficient milk (a little at a time) to make the soup the desired thickness. Bring to a boil, then simmer for 5 minutes and season to taste.

Nettle Soup with Vegetables

1 cup nettles
1 cup raw potatoes
½ cup minced onions
½ cup chopped celery tops
3-4 cups water
2 tablespoons oil
1 teaspoon salt (to taste)

Sauté the onions in oil for a few minutes, but do not brown. Add water and other ingredients. Cover and gently boil until potatoes are tender and beginning to break apart.

In place of potatoes ¼ cup rice and ½ cup pearl barley may be used.

If you have a basement or cellar the rootstocks of nettle can be dug in the autumn, placed in a box or tub and stored indoors. An ample supply of blanched, tender shoots will then be produced during the winter months. This practice is followed in Scotland.

A mild tea can be prepared from the dried leaves. One commercial brand, Alvita, can be obtained in some health food stores or where herb teas are sold. Many of the medicinal claims made by some of the North American Indians are of interest but of dubious value. The Squaxin tribe of the Pacific Coast make a tea of the crushed leaves and give it as a drink to women having difficulties in childbirth. This "scares the baby out", for the nettles are after him, according to the informant. The tea is also used as a tonic for colds, rheumatism and stiffness.

Nettles have certain high food values. They are said to be rich in Vitamin C, E, and K and have been found to contain about 5.5 per cent of albuminoids and about 7.8 per cent of carbohydrates. Nettles have also been used as a substitute for rennet, to coagulate milk.

In England nettles have been reported to be indicators of rich soil especially for soils high in phosphate and nitrogen. Whether this also holds true for our eastern Canadian plants remains to be determined.

The fibers of the nettle stem are long and strong and therefore can be retted out and made into an unbelievably strong twine. A durable cloth can also be spun from them. The British poet, Thomas Campbell once said, "In Scotland I have eaten nettle, I have slept in nettle sheets, I have dined off a nettle tablecloth."

Nettle is an excellent edible plant. It also is easy to find and has the distinction of being recognizable even in the dark.

Dennis W. Woodland,
Assistant Professor of
Plant Pathology,
Curator, McGill University
Herbarium.

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Productivity of Aquatic Plants And the Fertility of Sediments

The angiosperms or flowering plants are the most recently evolved, most widespread, and most successful of terrestrial plants. They are also eminently successful in aquatic environments. Increasingly man is coming into direct conflict with these "aquatic plants". On the one hand, he invades the pristine environment, draining marshes for muck farming or apartment buildings. On the other hand, excessive growth of aquatic plants in lakes, slow-moving rivers, fish ponds, irrigation ditches, and canals prevents legitimate use of these water systems by man. Resolution of these conflicts must be based on a clear understanding of the biology of the plants themselves and of their interactions with the environment. Sadly, we know little of either. In this article, I will discuss some recent research which suggests that at least part of the success of angiosperms in aquatic environments is due to their ability to take up nutrients from the aquatic soils or sediments, and to some peculiar properties of sediments which make them good sources of nutrients.

First, let us decide what constitutes an aquatic plant.

There are various degrees of tolerance for, or adaptation to, an aquatic existence from plants which can tolerate a water-logged soil for short periods to plants which live totally submerged and cannot tolerate exposure to air.

True aquatic plants (we are concerned here only with angiosperms) can be considered to be plants which normally begin life in water, and must grow for at least part of their life cycles either partially or totally immersed in water. Different and quite unrelated species may have similar "life forms" or vegetative habits. Four life forms of aquatic plants are commonly distinguished (Figure 1). All aquatic plants are descended from, rather than precursors of, land plants. Most have aerial or floating flowers. Those that are most advanced in returning to an aquatic existence are pollinated underwater. All except a few very reduced forms of aquatic plants retain some sort of root system.

Standing crops and productivity

There is a great variation in the standing crop produced by aquatic plants.

Standing crops of some representative species are given in Table I. Productivity of these plants, that is the total amount of organic matter produced per year, is approximately equal to the standing crops except for water hyacinth and turtle grass for which it is several times the standing crop figures.

In part the productivity achievable by an aquatic plant is determined by its life form. Floating-leaved plants for example tend to have low standing crops because growth occurs essentially in only one plane. The minute, free floating duckweed has perhaps the lowest standing crop of all aquatics, but by covering the water surface and effectively excluding light it can compete very effectively with

larger, more productive attached forms. Free floating forms with aerial foliage such as the water hyacinth have larger standing crops. Buoyancy in such forms is endowed by a high proportion of air filled tissue, and thus a relatively small amount of plant tissue may occupy a large space. These forms are notorious for clogging waterways, irrigation ditches and reservoirs, particularly in the tropics. Fresh-water submerged angiosperms generally have low standing crops and productivity because of the relatively low light intensities below the water surface. In the clearer ocean waters, however, submerged angiosperms achieve very high productivities. The highest standing crops are achieved by tall, erect emergent species. Productivities of these forms, and of the submerged marine angiosperms, are comparable to those of intensely cultivated agricultural plants.

Uptake of nutrients

In order to achieve a high standing crop or productivity, large amounts of nutrients, particularly of nitrogen and phosphorus, are required. Depending on the plant type, these nutrients may be obtained from the water, the sediment, or from both the water and the sediment.

Free floating plants obviously must obtain all of their nutrients from the water, and thus they are confined to relatively nutrient-rich waters. Emergents obtain nutrients from the substrate. Attached submerged and floating-leaved species appear to have two potential sources of nutrients: the water and the sediments. Leaves of submerged species have very little or no cuticle, and thin epidermal cell walls facilitating uptake of dissolved nutrients from the water. Specialized cells on the undersides of floating leaves appear to be functional in nutrient uptake. For many years the question of whether roots of submerged species are functional in nutrient uptake was a subject of considerable controversy. In land plants nutrients are conducted from the roots to the leaves via the xylem system which consists of two types of conducting elements, tracheids and vessels. The nutrients are carried in water; the water being moved by "transpiration currents" induced by loss of water at the leaves through evaporation. In submerged aquatics, the xylem system tends to be very much reduced or simplified. For example, the number of conducting elements is much less than in land plants. Because of this reduced nature of the xylem system, because submerged plants cannot possess a transpiration current, and because these plants can take up nutrients through their leaves, many botanists believed that roots do not function in nutrient uptake, but serve only for anchorage of the plant. It is only within the last few years that unequivocal evidence on this question has been obtained. Experiments utilizing radioisotopes

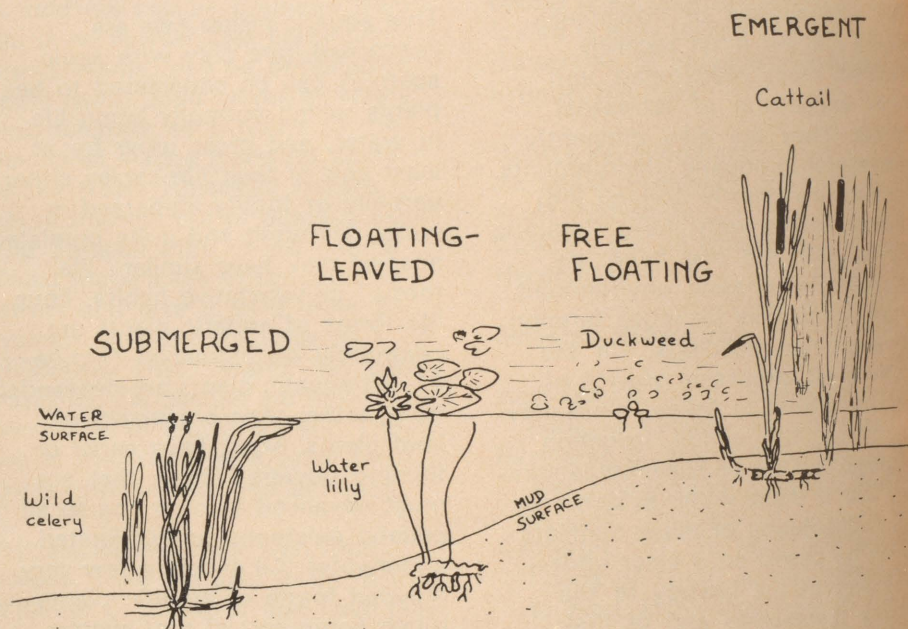


Figure 1. Familiar representatives of four common life forms of aquatic plants are illustrated as they might occur on the edge of a farm pond.

demonstrate conclusively that submerged aquatics can take up nutrients via the roots and rapidly translocate these to the leaves. The actual mechanisms by which the nutrients are translocated remain unknown. Eelgrass has been found to take up radioactive phosphate via the roots, translocate it to the leaves, and then to excrete part of it directly into the water. It may also take up phosphate from the water, translocate it to the roots, and then excrete it into the sediments.

The fertility of sediments

Are the sediments a good source of nutrients? The answer is yes but for different reasons than those which make a soil a good source of nutrients. Aquatic sediments, initially at least, are very poor in organic matter, and are very poorly aerated. A given volume

of water contains about one-twentieth of the oxygen that is present in an equivalent volume of air. Where water circulation is restricted and some organic matter is present, as in the sediments, oxygen is rapidly depleted and conditions become "anaerobic" (without air). Aquatic plants are specially equipped for growth in anaerobic sediments. Oxygen produced by photosynthesis in the aboveground parts of the plant, and absorbed from the water, reaches the underground parts via a well-developed system of air spaces. Also, roots, stems (which may be underground), and even leaves of most aquatic plants are able to respire anaerobically, that is in the absence of oxygen, at least for short periods. Some aquatic plants are so well adapted or addicted to anaerobic substrates that their underground parts will not grow in the presence of oxygen. Many

species, particularly the seagrasses, excrete chemicals into the sediments which stimulate development of anaerobic conditions. It is the oxygen deficient or anaerobic nature of the sediments that gives them most of their beneficial characteristics. Low oxygen or anaerobic conditions in the sediments usually result in increases in the supplies of available phosphate, nitrogen, and bases. These effects are brought about as follows:

Phosphorus Soils typically contain about 0.1 per cent by weight of phosphorus, an amount equivalent to at least 500 year's requirements for phosphorus for a typical crop. In aerated soils or sediments much of the phosphorus exists in very insoluble form in combination with ferric iron and is also trapped within insoluble ferric iron oxide. Under low oxygen conditions, ferric iron is converted to ferrous iron; this form of iron forms more

soluble compounds with oxygen and phosphate, and more phosphate then goes into solution and is available to plants. The ferrous iron may combine with sulfide produced under anaerobic conditions forming insoluble iron sulfide. It is this compound that gives anaerobic sediments a grey or blue colouration. Calcium and aluminum phosphates also tend to be more soluble under low oxygen or anaerobic conditions, but different mechanisms are involved.

Bases Under low oxygen conditions, ammonium from decomposing organic matter is not converted to nitrate since this conversion requires oxygen. The ammonium accumulates, and "exchanges" with or displaces other bases such as calcium, magnesium, manganese, iron, and aluminum held on clay minerals, resulting in greater concentrations of these bases in the soil solution.

Nitrogen Research conducted at Macdonald College indicates that very high rates of nitrogen fixation may be associated with roots of aquatic plants, particularly under low oxygen or anaerobic conditions. Nitrogen fixation is the process whereby gaseous nitrogen, a form of nitrogen which makes up 78 per cent of air but cannot be utilized by plants, is converted to a usable form, namely ammonium. Only bacteria and certain algae are able to carry out this process. It is an energy-requiring process, and thus energy must be provided either by light, as in the case of the algae, or from carbohydrates excreted by living plants or available on death of the plants. Bacteria living in the nodules of leguminous plants such as alfalfa and clover are important agents for fixing gaseous nitrogen in agricultural systems. In the case of aquatic plants, the bacteria concerned live in the rhizosphere (the region on and immediately adjacent to the root) in a mutually beneficial relationship with the plant. The plant excretes carbohydrate which is utilized for growth by the nitrogen-fixing bacteria, and the bacteria in return convert gaseous nitrogen to ammonium which is then taken up by the plant. We have estimated that rates of nitrogen fixation associated with the marine angiosperm *Thalassia* (turtle grass) are typically of the order of 100 to 500 pounds nitrogen fixed per acre per year. These rates are two to three times the rates normally associated with leguminous plants. Studies by French and Phillipine scientists similarly point to nitrogen fixation on the rhizosphere as being a major source of nitrogen for rice grown in water-logged soils.

Table I. Standing crop data for some representative species of aquatic plants.

Plant	Standing crop of above - ground parts on fertile sites (lbs dry matter/acre)
I. Free Floating	
Duckweed	244
Water hyacinth	13200
II. Floating Leaved	
Water lily	2990
III. Submerged	
Coontail	5980
Water Milfoil	2110
Turtle grass (marine)	12300
Eelgrass (marine)	13900
IV. Emergent	
Spikerush	4170
Cattail	18700
Cord (saltmarsh) grass	17600

Studies on the microbes involved in nitrogen fixation, on chemical systems isolated from these microbes, and on natural soil systems all indicate that nitrogen fixation is most efficient (conducted with the least expenditure of energy) under conditions of little or no oxygen. Thus it appears that the low oxygen conditions of the sediments provide an ideal site for nitrogen fixation. Because nitrogen is the nutrient most likely to be limiting production (i.e. the nutrient that has to be added to get an increase in growth), this is the single most important property of the low oxygen conditions in the sediments, and is undoubtedly the basis for the high productivity achievable by the emergent, and marine submerged angiosperms.

Besides oxygen deficiency, other processes also help to maintain high levels of nutrients in the sediments. Particularly important are: (1) Adsorption processes — In a water-sediment system the solids tend to take up phosphate and other nutrients dissolved in the water by "adsorbing" them on to their surfaces. If the nutrient concentrations in the water are extremely low, then some of the nutrients may be "desorbed" and returned to the water. The solids, however, always contain a much larger part of the total nutrients in the system than does the water. (2) Phosphate tends to combine with iron under aerobic conditions as in the water column, and form insoluble compounds which fall to the sediments. When these become buried, they may again be released under anaerobic conditions and be available to the plants. (3) By stabilizing the substrate, and slowing down water motions

immediately above the sediment surface, aquatic plants encourage deposition of suspended sediments. These sediments carry with them new sources of nutrients.

Aquatic plants and nutrient enrichment of aquatic systems

One process that is not particularly important in aquatic plant systems is the recycling of nutrients through deposition of dead plant material in the sediments. In areas of moving water as much as 40 to 100 per cent of the aboveground parts of the plants may be carried away by currents, either continuously or during spring floods, and decompose elsewhere. In this sense, the aquatic plant system is comparable to an agricultural crop such as wheat.

Aquatic plants not only manage to maintain high productivities in the face of such losses, but they may also aid in nutrient enrichment of other parts of the system. In the absence of plant removal of phosphate from the sediments, most of the sedimentary phosphate, once deposited would remain in the sediments and never again be available to plant life. Existence of plants growing in the sediments results in removal of some of this phosphate, and its eventual export to other parts of the aquatic system via direct excretion of nutrients into the water, and by the movement of dead tissue. Similarly, aquatic plants may contribute fixed nitrogen to other parts of the aquatic system; this nitrogen would otherwise remain in an unavailable gaseous state. Growth of aquatic plants thus aids in nutrient enrichment of aquatic systems.

Contributions of nutrients from salt marshes and seagrass beds in estuarine regions probably play an important role in maintaining the high productivity of these areas. In lakes, nutrient enrichment is part of the natural eutrophication process by which lakes gradually (not suddenly as in man-induced eutrophication) become richer in nutrients, more productive, and shallower.

Use of Aquatic Plants

Given the high productivity of many aquatic plants and the natural process of nutrient enrichment, which seems to occur in their soils, there seem to be many advantages in "aquatic agriculture". Cultivated rice, *Oryza sativa*, which is not a true aquatic plant but rather water tolerant, is, of course, the major source of food for much of the world's population. One of the chief reasons for this is its low requirements for fertilizer. Wild rice (*Zizania aquatica*), a true aquatic plant, is cultivated to a limited extent in North America. Research should be conducted into the possibilities of cultivating other aquatic plants for human consumption. Chemical analyses indicate many aquatic plants could be used as high protein content roughages. It is doubtful whether use of aquatic plants as animal food could be made economical in this country, but it might help to alleviate the costs of mechanically clearing nuisance growths of aquatic plants from waterways. In tropical countries, where both aquatic weed problems and protein deficiency are severe, use of aquatic weeds as animal food awaits development of

(Continued on page 20)

The Family

Farm

Published in the interests
of the farmers of the province
by the Quebec Department of
Agriculture and Colonization

Preventive Vaccination Against Clostridial Diseases

The Department of Agriculture and Colonization recommends the vaccination against clostridial diseases - - and especially blackleg (symptomatic anthrax) — of all young cattle in districts where the disease is prevalent. The purpose of this vaccination is to prevent calves from getting the disease and to put an end to repeated contamination of the soil by infected carcasses. The terms and conditions of this vaccination are as follows:

Blackleg infected districts: This term includes not only those farms or feedlots where the disease has been found but also those bordering on infected premises or situated along a watercourse draining any area contaminated by the bodies of animals which have died of the disease.

Calves reared on farms where blackleg has been identified or kept on neighbouring farms may therefore be protected against this and other clostridial diseases.

Proper age for cattle to be vaccinated: Animals between three and 30 months old may be immunized. The present policy does not authorize immunization of animals in any of the three following categories: (a) calves less than three months old; (b) animals over 30 months old; (c) any animal which has already been vaccinated with the same vaccine.

Vaccination period: Farmers may benefit from subsidized blackleg vaccination during the 12 months of the year.

Charge for vaccination: The owner will be charged 10 cents for each animal vaccinated. The Department undertakes to supply the necessary multiple vaccine and pay the veterinarian who administers it.

Cooperation required from veterinarians: The veterinarian must follow the procedure described below: (a) send for the required number of report forms and the quantity of vaccine he intends to use; (b) perform the vaccinations only within the boundaries of parishes where a diagnosis of clostridial disease has been confirmed in an Animal Pathology Laboratory. A copy of the laboratory's report must accompany the claim for payment of fees; (c) administer the vaccine only to animals which are at least three months old but not more than 2½ years old and have never had this vaccination before; (d) vaccinate only young cattle which are being raised, and only in the parish or parishes where blackleg has been observed; (e) collect 10 cents for each animal vaccinated and then send in a receipt duly signed by himself and the owner of the animals or his representative; (f) send the vaccination reports to the Veterinary Service attaching to them a money order or cheque, payable to the Minister of Finance for the total amount of his collection.

Cooperation required from farmers: Any farmer wishing to take advantage of this vaccination at the Department's expense must: (a) apply directly to a veterinary practitioner and not to the Department of Agriculture and Colonization. If the veterinarian is not willing to undertake the work, the request should be made through

the Department's regional office; (b) several days at least before the veterinarian's visit, let him know approximately how many animals are to be vaccinated; (c) on the day and, if necessary, at the time set for the vaccinations, keep his young cattle in the barn and fasten or otherwise immobilize them to the veterinarian's satisfaction; (d) consult with his neighbours so that, if possible, the animals of all of them can be vaccinated at the same time and during one session; (e) bodies of animals that have died of blackleg must not be skinned or left lying in the field; they must be burned or buried deeply covered with quicklime. It is important to break the cycle of development of this disease by preventing continual re-infection of the soil by infected carcasses.

Preventive Veterinary Medicine

Purpose: In order to complete certain agricultural programs now in effect, the Quebec Minister of Agriculture has decided to introduce an animal health program of the kind commonly called preventive. This policy applies wherever domestic animals or poultry are raised.

Eligibility: Any farmer may receive the help of veterinarians who are specialists in preventing diseases of livestock.

Mode of Operation: Because most of the veterinarians working in the agricultural field are now engaged in what is known as



curative veterinary medicine, especially in view of the emphasis lent to it by the contributory animal health insurance plan — preventive measures are largely left to veterinarians employed by the Government.

Nevertheless, there must be constant and close cooperation between persons engaged in both these branches of veterinary

science which, in practice, cannot be separated without serious harm to the farmers, since they are mutually complementary.

Professional Technical Help: As the cost of treating animal diseases has become heavy both for the farmer and for the Government it is only logical to offer farmers professional help which will enable them to reduce and, in some cases,

eliminate losses caused by animal diseases — losses which interfere with the smooth operation of a livestock enterprise.

Preventive veterinary medicine is applicable to all diseases met with in such enterprises. During the present year special attention will be paid to veal calf, dairy, and beef cattle enterprises.

Veterinary Extension Work: The program of information and instruction which the veterinarians of the Veterinary Service have been entrusted with will be carried out by the following methods: (a) individual visits to farmers; (b) group meetings through A.I. clubs and livestock improvements and farm management clubs, continuing education courses, etc. (c) information media, agricultural journals, radio and television broadcasts.

Preventive Vaccination Against Bovine Leptospirosis

The Department of Agriculture and Colonization recommends anti-leptospirosis vaccination, under a pilot program, in certain counties of the province in which the disease has been diagnosed by the Microbiological Laboratory of the Faculty of Medicine at Laval University.

The purpose of this vaccination is to prevent bovine domestic cattle from contracting the disease and thus to avoid considerable losses either from abortion or owing to a marked decline in milk production.

The terms and conditions of this preventive vaccination are as follows:

Designated regions: Analyses have revealed the presence of leptospirosis on live cattle in the counties of Arthabaska and Megantic and it is recommended that preventive vaccination be authorized for all herds in both counties.

Suitable age for vaccination: The vaccination provides pregnant and other adult animals with good protection. It is useless to vaccinate young cattle less than one year old.

Vaccination periods: The vaccination may be carried out at any time of year but preferably in spring or very early summer i.e., before the animals are let out to pasture.

It is important to ward off the disease by vaccinating any new animal brought into a herd which has already been vaccinated. Vaccinated animals will have acquired a certain degree of immunity about three weeks after vaccination. The vaccination confers good immunity for a year, so that annual vaccination will be sufficient. In some cases, however, the Department will allow additional vaccinations during a single year if it has to contend with a serious spread of the disease.

Cost of the vaccination: A charge of 10 cents will be made for each animal vaccinated.

Remuneration of veterinarians: Veterinarians practising in or in the proximity of Arthabaska and Megantic counties and wishing to cooperate in applying this program will be paid at the rate of 50 cents per animal.

Other preventive measures during an epidemic: (1) Pigs, dogs, and cats are often carriers of this disease germ (*Leptospira Pomona*) and it is recommended that these animals should not be allowed to cohabit with herds of cattle; (2) Visits between raisers of cattle should be kept to a minimum;

(3) Aborted calves or premature fetuses and the foetal envelopes must be destroyed by burial or incineration; (4) Vehicles which circulate on farms should be washed and disinfected.

Appointment of President of the Quebec Crop Insurance Board

The Minister of Agriculture of Quebec, the Honourable Normand Toupin, announces the appointment of Mr. Robert Samson as President of the Quebec Crop Insurance Board. Mr. Samson was sworn in on March 1.

Since 1968 Mr. Samson was coordinator of the Ottawa Valley agricultural region. In his new position, he replaces Mr. Roméo Martin, who has resigned but who remains attached to the Minister as adviser.

A graduate in agriculture of Oka (1948), Mr. Samson first worked as fieldman for the Canada Department of Agriculture from 1948 to 1959. He then became director of the external service for eastern Canada with the Meat Packers' Council of Canada (1959 to 1963) and later was in charge of the hog and dairy productions divisions of La Coopérative fédérée du Québec.

Mr. Samson is a former president of the Agricultural Institute of Canada and of the Animal Production Society of eastern Canada. He comes from St-Jean-Christophe, in the County of Lévis, is married and has six children.

Appointment to the Marketing Division

The Quebec Department of Agriculture announces the appointment of Mr. Victor Lafond as assistant director of the Marketing division at Montreal where he will be responsible for marketing promotion.

Mr. Lafond, who is a native of Montreal, studied at Collège Ste-Marie and at the Oka Agricultural Institute, where he obtained his degree in agriculture in 1953.

He completed his professional education by taking courses in horticulture at the Montreal Botanical Garden, in selling at the University of Montreal, in marketing at Collège Ste-Marie and in administration, publicity and promotion at the Ecole des hautes études commerciales.

Mr. Lafond first joined the provincial Department of Agriculture in 1953 but has since held the posts of territory manager with the Coopérative fédérée du Québec and later of sales coordinator with William Houde Ltée and Trac-Mat.

Before his recent appointment at the agricultural department, he was director of sales promotion for a well-known Montreal brewery. He is married and the father of three children.

Meat Inspection (Quebec Approved)

One very important reason for inspecting animal carcasses intended for human consumption is to obtain valuable information for use in preventing diseases of livestock.

Method: A large proportion of our domestic animals end up in abattoirs. The veterinarians on duty there make reports on the quantity and quality of confiscated carcasses or parts of carcasses. From these reports it is easy to estimate the incidence of certain diseases in a given region.

With the help of the Animal Pathology Laboratories the veterinarian in charge of that region's preventive veterinary program can then direct his efforts towards the diseases whose presence is indicated.

Professional Technical Help: This system enables the government veterinarian to make an investigation and get to the source of the trouble. Once a farmer has been informed, he is in a position to solve certain problems which are causing him losses through confiscation of his animals at the abattoir.

Results: Meat inspection is thus a very effective way of detecting animal diseases and thereby leads to considerable success in preventive veterinary medicine. Modern farmers owe it to themselves to be aware of all aspects of animal disease prevention in order to be in a position to make a success

of their livestock enterprises and render them more profitable.

During recent years a number of diseases such as tuberculosis, certain uterine inflammations, muscular disorders of nutritional origin, parasitic infestations of cattle and pigs, trichinosis, erysipelas of swine and turkeys, rhinitis, rot in sheep, coccidiosis, leucoses and entero-hepatitis have been investigated and corrective measures have been passed on to farmers.

Another equally important aim of meat inspection is, of course, to ensure the hygienic safety of the consumer's meat supply.

Some of the carcasses inspected have to be confiscated because they show signs of diseases known to be communicable to man; others are rejected because their colour or odour is offensive or because the meat lacks nutritive value.

Meat processing plants are also inspected. Hygienic treatments of meat products are under regular surveillance. Carcasses or parts of carcasses judged fit for human consumption are marked with the Quebec approved stamp and the same applies to containers of processed meat parts.

Notices From the Quebec A.I. Centre

38,828 First Matings in 1972

We have recently reckoned up the results of the artificial matings made in 1972. A new peak of 38,828 first matings was reached, compared with 289,353 first matings for the same period the year before. This represents a fantastic increase of 99,475 first matings or 34.4 per cent.

This is the largest number of first matings ever made in one year by an A.I. Centre in Canada.

Death of Two Holstein Bulls

We unfortunately had to send two aged Holstein bulls for slaughter last month, namely: H 88 Innyslodge "Citation" Mark — excellent and H 104 Frech "Netherland" Seven Up — V. G.

Both these bulls were getting on years and their departure can be put down to troubles of old age. H 88 Citation had not produced any semen for nearly six months and there was no hope of his returning to normal production.

H 104 Netherland had suffered from partial paralysis of one of his hind legs for the past two years. His physical condition had deteriorated so fast during recent months that he was no longer capable of service.

Our supplies of semen from these two bulls have already been distributed except for a few ampoules that we are keeping for special orders. Interested breeders may buy them for \$2 each.

Sale of Semen Directly to Breeders

Direct sale service to members who want it: In the December issue of the Quebec A.I. Centre's "News Flashes" we mentioned the establishment of a service whereby members so wishing could have the privilege of buying semen of the Centre's bulls. The purpose of this service is to enable breeders to continue their breeding programs with the bull of their choice even when he is no longer in regular service for one reason or another.

Since this service has been available, a number of breeders have taken advantage of it to buy semen of certain bulls in order to ensure continuity of their breeding programs. Unfortunately we have also had orders from people who wanted to buy semen for purely speculative reasons; these members bought semen at the prices mentioned in the December issue and immediately offered it at a higher price to outside breeders.

As a result we have had to revise our price list so as to reduce the spread between the cost to our members and the cost to outside breeders. The new price list enables members to buy semen from the Centre's bulls at a reduced price, though never cheaper than \$2 per ampoule.

Below in brief are the rules covering the direct sale of semen to members. (1) This service is only for members of clubs served by the Quebec A.I. Centre; (2) Semen so purchased by members may be kept at the Centre for one

year without any charge for storage; (3) Members who buy semen from a certain bull in this way are **still entitled to his regular services if available**; (4) Cheques must be made payable to the **Minister of Finance** and must accompany each order; (5) The maximum quantity of semen from any one bull which a breeder may buy in a year is 50 ampoules; (6) The price of service at the farm is the same whether the semen is obtained in the usual way or bought directly from the Centre; (7) Prices are subject to change without previous notice and, in the case of each bull's semen, depend on the demand for it and on the supplies we have available; (8) Semen bought by a member from the Centre may be resold or used in any way he sees fit; (a) if the member resells the semen to another member of an affiliated club it will cost him \$5 to have the transfer made, regardless of the amount of semen involved; (b) if the member wishes to resell the semen to a Canadian breeder outside Quebec it will cost him \$10 for handling charges and \$10 for the rental of a biostat. The cost of transporting the biostat will be borne by the buyer.

Notice to all Branches

Q.W.I. has been asked to make a presentation at FWIC National Convention, Banff, June 1973, of any new project of County or Branch during the last three years.

Please send a short story of any of your projects as soon as possible to the Q.W.I. office at Macdonald College so that it can be presented. Thank you for your cooperation.

FWIC National Convention, Banff, June 18-22, 1973

There are six vacancies for Q.W.I. delegates from the members. If interested, please contact Q.W.I. Office for details.

Provincial Convention

The Quebec Women's Institutes Annual Provincial Convention will be held at Macdonald College, May 22 to 25, 1973.

A Year's Activities

Summer months are extremely busy times for W.I. members. Meetings held at the **Wyman** branch in Pontiac County during this period are always filled with discussions on gardening, preserving fruit and many recipes are exchanged for making jams and jellies. We have found that freezing is the most popular means of preserving fruit.

If the day of the meeting is a good "hay day", attendance is small, but if the weather has been rainy, all members assemble for an afternoon or an evening of information and relaxation.

August and September meetings see a collection of articles for the W.I. exhibit at the Fall Fairs. An item for exhibit one year was three quilt blocks — one appliqued, one embroidered, and one pieced. All members brought sample blocks. After choosing three for exhibition purposes, the others were used to make a pieced quilt. This was a unique idea but the finished product was very beautiful.

In November the members held a potluck luncheon at the home of Mrs. Wyman MacKechnie. Each member brought a guest and the County President, Mrs. Walter Kilgour, gave a short but inspiring talk. It was noted that the Wyman Women's Institute would celebrate their 60th anniversary in March 1973. Special feature for this year is the 60th anniversary cook book.

A Christmas Party is the format for the December meeting. Members exchange gifts and each member contributes an item to the program. Last December Mrs. Wm. Marks recited a poem, "Hang up the Baby's Stocking" which she had learned as a child.

Sometimes winter meetings have to be cancelled because of weather problems. However, the weatherman has co-operated this year. We had a very interesting meeting in January at the home of Mrs. Roland Graham. Mrs. Donald Duff was in charge and gave a taped article on "What is Poverty?" which brought home to us just how little some of our citizens have.

One of our interesting mottos this year was "If your knees shake, trying kneeling on them."

Adult education is a topic which is creating a good deal of interest in this area.

Looking forward to spring sees an exchange of seeds, slips, and bulbs. This is also the time for the Annual Meeting and the search for officers takes place. While this sometimes proves rather difficult, Wyman Branch have been able to have a full slate of officers at election time. Reports of Conveners are heard, and members realize how much worthwhile work has been accomplished during the year. A County Meeting is usually held in May and this is well attended.

At the time of the Provincial Convention, although life in a rural area becomes very busy, we have been able to send a delegate to the Convention who returns with a favourable report.

A Most Informative Meeting

From **Rawdon's** (Montcalm County) monthly report . . . We adjourned our meeting early as we were fortunate in having a guest speaker with us. Mr. Henry Asbil, of St. Agathe showed slides of his travels in Labrador, northern Quebec, northern Ontario (including Churchill Falls and the James Bay project), and parts of the most northern regions of the North West Territories. He lived in little villages right with the people all throughout his trip. The squalor they live in is unbelievable. The government is helping some of these places now to build proper houses but most people still live in shacks made of whatever they can find around them. The best house we saw was made of stone and the worst was a home constructed out of a used sewer pipe. We agree

with the people who say we should keep some of our donations at home to help these people. Most of them really need it.

Lawdon branch has been doing their part to aid these Northern citizens . . . many knitted articles were sent last fall along with toys to brighten the lives of children, and the members are willing to share information from their experience.

Two other worthy projects of Lawdon branch is the aid they have given to SPERA, a drug rehabilitation group, and visits to the Heather Hospital for the chronically ill. At present the members are practising their play for the drama competition at the Provincial Convention.

Bristol W.I.

Bristol W.I. in Pontiac County own their own hall, which used to be the Bristol No. 1 Rural School. Potluck suppers and card parties are held in this hall.

This branch reports the following activities: Donated and made bibs for the Ade Hospital; held a mending bee; took care of Memorial Park in the village and also bought a flag for the park. Different demonstrations were held during the year, one being on Crewel embroidery. A speaker at one of the meetings was Mrs. Henry McCord, who spoke on her trip to Europe.

Fort Coulonge

An old trading post located at the mouth of the Coulonge River in Pontiac County was the earliest establishment on the Upper Ottawa. It goes back to around 1653.

Its founder was Louis d'Ailleboust (1612-1660), sieur de Coulonge et Argentenay, third Governor and Lieut.-General of New France. He married Marie Barbe de Boullogne in 1638 in Paris and came to Canada in 1645 with his wife and her sister Philippine. He worked with Maison-neuve in the building of Montreal. He was interested in the fishing and fur trade and established a fishing post at Percé and a fur trading post at the Coulonge with some associates. He had no children and it is likely that the family never lived at Fort Coulonge as his wife was in poor health. He died in Montreal in 1660.

Later the trading post was taken over by the North West Trading Company in 1795, and in 1802 by a private company called "XY" and finally by the Hudson's Bay Company in 1821.

The oldest family that connects with the families still living at Fort Coulonge was that of James Hudson, born about 1740 and residing in Mansfield Township, possibly at the old fort. Among his descendents are names such as Secord, Lavoie, Laliberté, Danis, Hearty, Bertrand, Frost and Rivet.

Another old family that lived at the Fort was that of Thomas Taylor, the last factor of the Hudson's Bay Company. When the trading company sold out their interests in this area, the buildings and farm were bought by Taylor. Several of these old buildings are still standing and in use.

One of the chief points of interest in Fort Coulonge is the covered Marchand bridge built in 1898. One of the longest covered bridges in Canada, it was built by Augustus

Brown of Beachburg for a contract price of \$6,000. After many years of service and in need of extensive repairs, the bridge was doomed to be demolished. Due to the efforts of a local fund-raising committee, with the co-operation of township officials, the bridge was repaired and put back into service. In 1972 more repair work and a new paint job were carried out.

The Women's Institute of **Fort Coulonge** have been instrumental in plans for a picnic and rest area to be built on the west side of the bridge. No matter what time of year, be it spring, summer, winter or fall, tourists can be seen taking pictures of this famous old bridge at Fort Coulonge.

Annual Banquets in Bonaventure County

The **Grand Cascapedia** branch of the Q.W.I. held their Annual Banquet December 2, at the Chalet Francis in New Richmond. About 100 people including members and guests, enjoyed a delicious turkey dinner with all the trimmings.

Honoured guests attending were Mrs. Bertha Hayes. County President, her husband, and Mrs. Patrick Jones, Provincial Convener of Education. Mrs. Archie Cochrane, branch president, welcomed those present and thanked all who in any way had helped the branch during the year. Mrs. Alma Nadeau expressed thanks in French and introduced the guest speaker, Mr. "Bud" Campbell, who spoke on the "Life History of Salmon". This subject was very interesting and was enjoyed by all present.

Mrs. Jones and Mrs. Hayes expressed their appreciation for

having been invited and commented on the useful work done by the Women's Institute.

A social evening of music and dancing followed. Thanks are due to Mr. Cyr and staff for making the evening a success.

The Annual President's Banquet of the **New Richmond West** branch of the Q.W.I. was held Friday, February 9, in the Cascapedia Hotel. About 100 people, including members and guests, attended this function, and a delicious turkey dinner with all the trimmings was served under the auspices of the Hotel's congenial host Mr. Paul Ferland.

Mrs. Carl Bujold, branch president, welcomed those present and also expressed thanks for help their branch had received during the year. Mrs. Edwin Campbell gave the "Welcome Address" in French and introduced the Guest Speaker, Mr. Bert Cyr, who chose for his topic "Women". This subject was very fitting for the occasion, being both informative and amusing.

After the dinner, a social evening of dancing was enjoyed by everyone. Music was supplied by the hotel orchestra. We are very grateful to our host and staff who spared no effort to make this a very enjoyable event.

Matapedia held a dinner in December at the Restigouche Hotel. A social evening followed with exchange of gifts, music and dancing. A games evening and home cooking sale was held in February. A mystery package, which was donated, added to the success of the evening.

From **Canterbury** branch, (Compton Co.):

Ode to Our Charter Members

In thought and with pride let
us reminisce
About our departed W.I. members,
And Oh! how much they are missed.

Let's travel down memory lane,
The year is nineteen fourteen
When several Canterbury ladies
Ah! yes, they too had a dream.

Word had come from Ontario's
Stoney Creek
About the good found in W.I. work —
To teach women to grow better families
As farm wives, their duties not
to shirk.

We had five charter members
Who believed in good deeds done;
They worked hard for Health and
Education
Eventually the battle was won.

Affectionally known as —
Mrs. Finley and Aunt Kate
Annie Groom and Annie Ben
With Mrs. Lillian Churchill —
To succeed often doing the work of ten.

To attend meetings they sometimes
walked;
Sewing bees were held all day.
In the winter they laughed about
good times had
With Old Dobbin in the sleigh.

Over the years they talked to us
About lending a helping hand.
Bring up your families strong and good,
Teach them to love and accept the land

Always belong to the Institute
There is much to learn;
If you do your duty willingly,
For friendship you'll never yearn.

Our way of travel has changed a lot;
We always go by car.
We attend many Institute gatherings
Be it near or far.

Canterbury W.I. still flourishes —
We cook, knit, and sew;
May our want for knowledge
instilled in us
Continue to grow and grow.

Our handicrafts are many,
Our good deeds well done.
We visit senior citizens,
Give school prizes to the young.

We have yearly parties,
Gifts for Sister Sue;
We try to carry on with pride
The things they taught us to do.

Members hold this banner high,
Work with pride and trust;
So may we pass this banner on
As it was passed to us.

Part Time Projects for Profit

The recent survey "Government Involvement in Agriculture" was well answered by the Quebec Women's Institutes. There was one unanswered question many of the replies carried. "What is there for farm women?" Subsidies and pensions are not for them. Pin money is no more. Where is the egg money for the cookie jar?

It is a natural desire of the farm woman to have some part of the farm income designated for her use and maintenance of the home. Recent years have seen a change in many of the old ways of earning extra money in the rural areas. What new ways may be found? The ideas that follow are given for consideration by the farm woman who can only spare part of her time from her home. Those women who were able to leave the farm for full time labour are already at lucrative jobs. With one eye on the cows in the meadow, young children, and the ripening crops, the question is asked, "How can we have something for ourselves?"

First ask the question: "What is the need in your community" and study all the answers you come up with carefully. Before you tackle



Left: Mrs. George Deacon, a Past President and Honorary Life Member of Lachute W.I., presenting an Honorary Life Membership to Mrs. Frank Brennian, who was the founding President of the Lachute branch. Below: A similar presentation was made to Mrs. George Paul, right, by Mrs. Perley Clark, Provincial Convener of Publicity, on behalf of the Lachute branch.

project take into account expenses and time required and the market and profits for the end result. Is there a tourist route nearby? Are you near a village or city? These facts will make a difference to the answers you may find.

What about baking bread, doughnuts or making and decorating cakes for special occasions. Consider cost of ingredients, heat, and display facilities plus returns for time involved and profit.

There is the possibility of caring for elderly people who like quiet country living. This involves cost of food, heat, electricity and telephone plus time for their care. There are government rules and regulations which should be checked before you consider caring for the sick.

Garden and greenhouse products require seeds, fertilizers, weed killers, insecticides, heat, and land. Calculate returns for time required for planting, cultivating, harvesting and profit. Also needs strong back!

Delivery route: direct farm sales or delivery to customers is still allowed. Consider cost of housing, catching, feeding, and delivery or display area and returns for time, returns for profit, knowledge of marketing laws.

Raising calves is a venture that might interest many women as the calves respond well to the more constant attention a woman may have time to give them. Points to consider: Buying the calves from the farm enterprise, cost of powdered milk, silage, hay, straw, housing, plus time required for

feeding and cleaning, profit and hope for few veterinary or medical costs with the good care she will be giving them.

Handicrafts, crocheting, knitting, dress-making, quilt-making. Returns are little per hour of work but may be done to fill in at odd moments thus returning pennies for lost moments. Dress and pant fitting returns are more satisfactory. Many commercially-made crafts are of an inferior quality and as we all know carry the label "Made In - - - - -, not a Canadian product.

Buying and restoring antiques is a new, lucrative trade. Cost of articles to sell plus refinishing and repairs to be considered. At present day prices these articles have good sales. China and glass-ware are a good line to accompany this trade. Another question to consider: Where should heritage articles be placed? We are selling ourselves short on the past.

New sheep business for wool should be researched very carefully though lamb market may pay the taxes.

In distant areas where wildlife and game are in abundance or propagated, a hunting or fishing lodge might be feasible. This would give work to a guide and house-keeper-cook. How are you earning extra pin money? Let us hear from you.

Mrs. Gordon French,
Q.W.I. Agriculture Convener.



Dear W. I. Members:

A parcel in the mail interrupted my preparation of this column and changed my train of thought. Several W.I. Journals from my Institute pen pal in Northern Ireland have made interesting reading. My friend's branch is doing well and has a good attendance. From the magazines sent I learned that there are new members at many branches, they have programs much like ours but many more contests and competitions such as: the most attractive napkin shape, book marker, most colourful autumn leaf, bird carved from a potato, funniest misprint, etc. (write to me for more of these ideas). It was of interest to read the Northern Ireland W.I. Federation President's New Year's message from which I quote, in part: "As we move into the New Year I feel that in all

confidence we see the first signs of better times coming to our ravaged province. In the midst of so much anguish and misery, both mentally and physically that has befallen all age groups, it is a very stimulating fact that our members in the Federation continue their activities with such zest. Their enthusiasm and work is, and will continue to be, a most important contribution to the rebuilding of our beloved land . . ."

Do make sure you hear the Q.W.I. Service Fund Story. This was sent out to all branch Secretaries by our Q.W.I. Secretary.

Some interesting contests were reported recently. **Pioneer's** candy contest was judged by three husbands. A novel contest at **Milby** was "Take it in Stride" with one cent per foot of stride bringing 70 cents. A new member was the winner. **Abbottsford** guessed the amount of money in the Pennies for Friendship jar and found they had a large contribution this year. **Lennoxville** had a quilt block contest and **Rupert** had a contest on weeds.

At **Sutton** letters of protest were sent to the Provincial and Federal members of Government re the closing of the County Fair.

South Bolton heard the highlights of the 1973 Board meeting and urged the members to take part in all competitions. Members read a Valentine poem or paid a dime. Valentine's Day was celebrated by

several branches. **Howick** had a demonstration on icing a Valentine cake, which was presented to a 90-year-old member celebrating her birthday.

Congratulations to **Eardley** — they celebrated their 54th anniversary with a social afternoon.

Several interesting talks were reported. **Ascot** heard a talk on a teacher's impressions of Australia; living costs and salaries were both lower than in Canada and although Mr. Labonte enjoyed his experience, he prefers living in Canada.

Mr. Dan Tully, Fire Chief of the Hinchinbrooke Volunteer Firemen, gave an excellent address to the **Dewittville** members on fire prevention and on procedures to be followed in case of fire. He showed two types of fire extinguishers and explained their use and maintenance. He answered questions and left everyone with a feeling of security, knowing that a team of well trained and dedicated volunteers are ready to help at a moment's notice.

Hemmingford member Mrs. D. Wooley is Chairman of the School Committee of the Chateaugay Valley Regional School in Orms-town. She explained the functions of this committee and its place in the school structure. Mrs. J. Kyle, Chairman of the Hemmingford Elementary School Committee, then spoke on the functions of this committee.

A sum of \$20 was voted by **Beebe** for the Sunnyside School children in Rock Island for equipment to learn ceramics. Mrs. Enid Cooke, a Beebe W.I. member and a retired school teacher has offered to give the course free of charge.

Gore made 1085 cancer dressings and hospital shirts.

In closing I believe the most important qualification for holding an office in the W.I. is willingness . . . willingness to learn, to work, and to ask questions. Increased interest will follow naturally. So, if you have been elected to a new office or convenership, take heart.

If the office is worth having, it is worth the best in you; Give it then your best endeavour, never drag but push it through. Keep the whole work going forward, have objectives right in view; Never mind how small the opening, YOU put in it something new. It's not just an officer we're wanting, it's a **person** that we need; An individual with a purpose that won't let things go to seed. Don't be shy or just retiring — that's another name for shirk; Magnify, promote that office — all it takes is simply work.

Mrs. Perley Clark,
Q.W.I. Publicity Convener.

(Continued from page 10)

the technology required for harvesting and processing the plants. The possibility of using aquatic plant-eating mammals and fish to control aquatic weeds and as a source of food is being investigated in tropical countries. Chemical analyses on the whole have not shown aquatic plants to be good potential fertilizers. Such use may also be inadvisable as it would encourage infestation of irrigation ditches by the weeds concerned. The only aquatic plants which are used extensively on a commercial basis at the present time appear to be the Danube reeds which are harvested very successfully for pulp in Romania. Because of the high productivity

of reedswamps and their cosmopolitan distribution, this could become an important industry in other countries.

We must recognize, of course, that aquatic plants in their natural habitat are a home and direct or indirect source of food for a great variety of invertebrates, fish, birds, and mammals. Ducks, geese, swans, beaver and moose, to name only a few, feed directly on aquatic plants. Most of the production is utilized only after the plant tissue is broken into small pieces and is attacked by bacteria. Many invertebrates and fish feed on this "detritus". The ultimate consumers of the plant energy may live hundreds or even thousands of miles

away from the site at which the plants were produced. In this way, as well as through the nutrient enrichment processes previously discussed, marshes at Rivière-du-Loup, for example, help support fish life of Prince Edward Island. Such complexities should be taken into consideration before we "reclaim" what appears to be "useless marsh land".

D. G. Patriquin,
Post-Doctoral Fellow,
Department of Microbiology.

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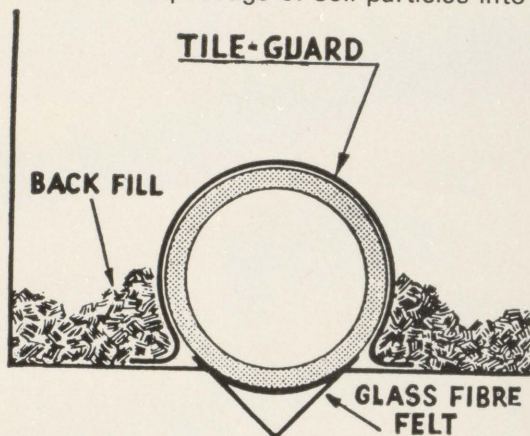
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